

LIQUID NONHAZARDOUS WASTE HOLDING TANKS

Holding tanks are sometimes referred to as “pump and haul tanks.” They are used to accumulate and store nonhazardous waste until it is shipped off-site for proper disposal or recycling. Holding tanks are available in many different shapes, sizes and materials. They are usually made out of fiberglass, plastic or steel. Holding tanks do not discharge wastewater to surface or ground water or onto the surface of the ground. Several agencies have oversight of regulations pertaining to holding tanks. There are different requirements depending on whether the tanks are installed aboveground or underground, and what is stored in them.



Example of underground holding tank installation.

Locations servicing vehicles, farm equipment, and airplanes that have floor drains leading to septic systems, dry wells, cesspools, pits, drain tile/leach fields, etc. are being contacted by the US Environmental Protection Agency (EPA) that their floor drains are a Class V injection well as a Motor Vehicle Waste Disposal Well and that they need to plug them off, or install a holding tank to collect the wastewater. Make sure to meet the federal requirements and close the drains and document the closure even if you don't receive a letter or visit from EPA. Information is at www.epa.gov/r5water/uic/uic.htm. In most cases, the facility will need to install a holding tank as part of an alternative waste management practice. If the facility is connected, or has the option to connect, to a municipal wastewater treatment system, get approval from the sewer authority to discharge your waste to that system. If you are considering if a DEQ groundwater discharge permit for the business is an option, first discuss your situation with the Water Bureau [District Office](#).

BEFORE INSTALLING A HOLDING TANK

1. Look at your current practices to see if there are ways to reduce the amount of wastewater or liquid waste that is generated. This will save you money by having lower waste disposal costs and also by being able to install a smaller holding tank system.

For less wastewater from floor cleaning, avoid using hoses to “wash down” the floors. Use dry mopping and use biodegradable floor detergents instead of degreasers and solvents when possible. Another recommendation is to use a three mop system for shop floor care and spill management at repair shops. Having three dedicated mops enables waste segregation and avoids mixing wastes. One mop should be dedicated for antifreeze spills, one for soapy water to mop shop floor, and a hydrophobic mop that absorbs only oil, not water or antifreeze. Wring out absorbed fluid into suitable containers for recycling or disposal. By using this system of mops, a shop can keep this waste out of their holding tanks reducing the volume of waste liquids collected and the cost of disposal. If oil is present, mop it up first. Use a hydrophobic mop for oil spills and restrict back-and-forth movement of mop to avoid spreading the spill. If antifreeze is present, mop it up using a dedicated cloth mop. Use a wet mop only if necessary for final cleaning—use a mild non-caustic detergent.

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2. Determine which Department of Environmental Quality (DEQ) program regulates the waste and meet that program's requirements. This guidance summarizes requirements and recommendations for holding tanks containing nonhazardous **liquid industrial waste** regulated under [Part 121 of Act 451 of 1994, as amended](#). Liquid industrial waste includes waste from other types of businesses and government operations in addition to industries. This guidance does NOT apply to the following materials and waste:
- **Hazardous waste**; See the [Waste Characterization](#) guidance if you haven't determined what kind of waste you have. If you need further assistance with this, contact your waste consultant, disposal and recycling company, or call the Waste and Hazardous Materials Division [District Office](#) to discuss your situation.
 - **Septage**; Meet the local health department, local building office, and Water Bureau Septage Program requirements. Go to www.michigan.gov/deqseptage for more information and have the septage hauled by a licensed septage hauler.
 - **Regulated substances** overseen by the Waste and Hazardous Materials Division Storage Tank Program. It will be regulated if the stored material:
 - Has a flashpoint below 200 degrees Fahrenheit and/or,
 - Is a [regulated substance](#) stored in an underground storage tank. This includes substances listed in the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), specific chemicals listed under the Clean Air Act, or petroleum materials. Find the link to the regulated substances under the [Underground Storage Tank Program](#) description at www.michigan.gov/deqland and select "Storage Tanks."

NOTE: A holding tank would become a regulated underground storage tank if it contains 110 gallons or more petroleum products. In regards to oil water separators and holding tanks collecting that liquid it is viewed that if the tank, no matter the size, would never have more than 110 gallons of regulated substance in it when full, then it is exempt by definition. So, if a 2,000 gallon tank is installed, it will be exempt as long as the fluid going into the tank has less than 5.5% ($2,000 \times .055 = 110$) petroleum products in it. If it ever gets to or goes over that percentage, then it will become a regulated underground tank. Percentages will vary by tank size.

If you had an emergency spill of petroleum products into the holding tank, then there is an exemption that it would not become a regulated storage tank if the tank was pumped out within 10 days of the spill.

Call the Storage Tank Program at 517.335.7211 about storage tank requirements for regulated substances including plan review and tank permits.

3. Check with the building/plumbing inspector about local requirements including the installation of holding tanks, oil/water separators and grit or sand/water separators. If the tank will be connected to the local sewer system for controlled discharges to that system, also contact the wastewater treatment plant authority for their requirements. If the tank will be installed at a public school you will probably need to obtain an application for site review and construction permit from the Department of Labor and Economic Development [Bureau of Construction Codes](#).
4. Contact your insurance company to see if they have any special risk control requirements to ensure you have insurance coverage.
5. Discuss your proposed holding tank design with the waste hauling company to make sure they can service it the way you are planning on installing it.
6. Obtain several bids regarding your tank installation project. Some tank supply companies offer consultation services to help identify site conditions and restrictions, location suitability, alternative tank-site locations, plumbing considerations, foundation and soil stability observations, permit acquisition, storage alternatives, tank delivery issues with highway and street route access, and other cost-saving suggestions.

CONSTRUCTION RECOMMENDATIONS AND REQUIREMENTS

The specific design and construction methods will depend on the waste that will be stored in the tank, but the following design recommendations provide optimum protection against inadvertent releases. Less protective designs may be used as long as the waste is kept out of the environment. However, using less protective designs may present an increased potential for inadvertent releases with cleanup liability and costs for the site owner/operator.

1. Install and/or construct the holding tank according to local requirements. Obtain necessary building permits for local authorities.
2. Must meet the liquid industrial waste regulation requirements so tanks are:
 - **Protected from vandals and weather.** Add enough space in the tank to protect it from the contents expanding by freezing and heat. Use a very heavy lid or a locked cover to restrict access especially protecting it against access by children.
 - **Kept closed** at all times except when waste is being added or removed. It may be as simple as a floor drain plug or a ball valve or some other type of closure device between the floor drain and tank. Depending on the waste, a conservation vent, or two-way closer, may be needed for proper tank venting or a trap in the pipes heading to the tank to prevent odors. Do not use an open top tank.
 - **Compatible with the waste.** You can usually find compatibility information in the Material Safety Data Sheets (MSDS), websites such as www.flw.com/material/index.html, or discuss with your consultant, design engineer, and tank manufacturers and vendors for recommendations. For example fiberglass tanks are generally not compatible with wastewater which may contain acetone, as found at auto body shops. Cement is not compatible with acidic wastewater or with wastewater containing gasoline or solvents.

Calculate adequate storage capacity for the amount of waste you will be accumulating before the waste is picked up. When deciding on size, a good starting point is to estimate the average amount of wastewater generated per day and multiply it by the preferred number of days between pumping. Consider additional volume in case winter weather conditions prohibit a regular scheduled pickup. The smaller the holding tank, the more frequent the pumping schedule resulting in higher disposal costs. However, an oversized tank and infrequent pumping schedule can cause odors to form in the stagnant wastewater. Proper sizing and installation should help avoid having problems with settling or affecting buildings on the site. If you have questions how to size or install the holding tank, work with an engineer or building contractor.

3. Tanks should be made from a leak-proof material. Consider using aboveground storage tanks (AST) instead of underground tanks. ASTs are preferred because it is easier to promptly detect and correct any leaks. It is recommended to use a double-walled tank, or conduct annual water-tightness tests for single-walled tanks. Do not use flammable waste traps as holding tanks. Do not use concrete vaults, including septic tanks, as the primary tank. Concrete can easily crack and is pervious to certain solvents. Concrete joints are also avenues for leaks, especially if solvent materials are present. Concrete vaults can be used to provide secondary containment for another tank placed inside the vault if the vault is constructed with water stop joint design and the concrete is coated with an impermeable material compatible with the waste, and you perform inspections periodically to ensure there aren't cracks or other problems with the containment.

For underground tanks, it is important that the holding tank be accessible at ground level. Generally, this is accomplished using a catch basin riser and access cover. The holding tank also needs to be "tight" – ensuring that it does not leak through its sides, bottom, seams or top and there is no entrance for storm water, surface or ground water. Below ground tanks in vehicle traffic areas must withstand appropriate loading and the holding tank foundation must be able to both support the holding tank when it is full of industrial wastewater and prevent uplift when it is empty. Adhering to proper backfill standards will minimize any potential shifting or cracking of the tank. Steel piping is also not recommended but if it is used, it should be provided with cathodic protection.

To find tank suppliers, search the internet using keywords like industrial waste holding tank or look in industrial magazines that include advertisements for stainless steel, fiberglass, or other tanks.

NOTE: If you install an aboveground tank and it contains oily waste (which also include fuels like gasoline, diesel fuel, lubricating oils, etc.), and you have 1,320 gallons or more storage capacity for all oils on-site, there are federal and state regulations that apply when the contents contain 1% or more of petroleum products. The state rules also apply if the contents contain 1% or more of the regulated chemicals listed in the state's Part 5 rules.

Information is at www.michigan.gov/deqwater "[Emergency Response for Releases to Water](#)."

4. Install an audio and visual alarm or level detection device to prevent overflows. One suggestion is to have a warning system installed that alerts users when the tank is 75 percent of its total capacity. If the tank does not have an alarm system, then liquid levels should be measured manually ("sticking" the holding tank) at least monthly during the first few months of installation to gauge rate of fill. One advantage of translucent, aboveground holding tanks is that alarms are less critical as the wastewater levels can be determined by visual inspection.
5. Secondary containment is recommended and is required for outdoor aboveground tanks when the waste contains 1% or more of a polluting material as listed in the Water Bureau Part 5 Rules Spillage of Oil and Polluting Material. Information is at www.michigan.gov/deqwater "[Emergency Response for Releases to Water](#)". If it is brine waste, you may also want to see the [Salt and Brine Storage Guidance for Road Agency Maintenance and Other Facilities](#) guidance.

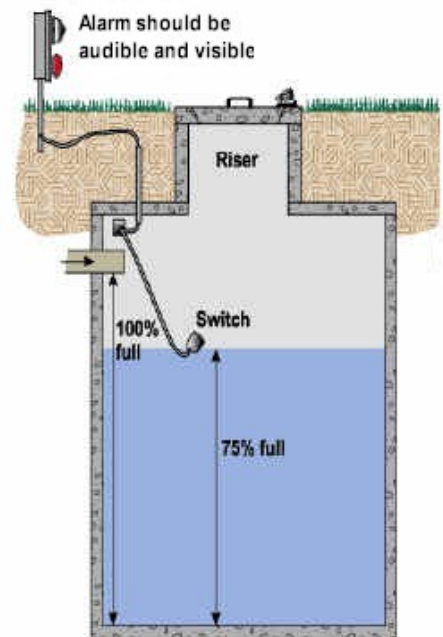
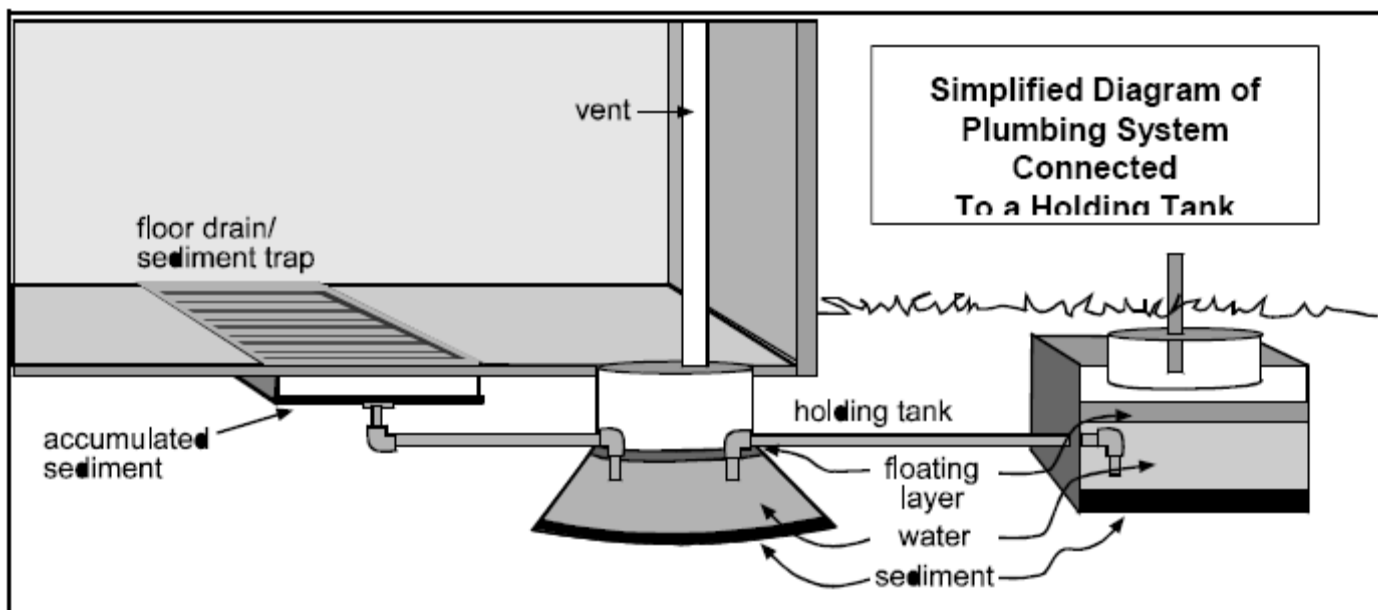


Diagram from Maine Holding Tank guidance

If installing a secondary containment structure outdoors, make sure to size it to deal with rain and snow melt and provide a sump to allow easy removal of the precipitation and any material that may have leaked or spilled.

6. Use double walled piping leading from the floor drains to the holding tank. Buried piping should have some type of leak detection system provided.

7. Determine if venting is needed. Normally if a vented and water-sealed flammable waste trap is installed in the line before wastewater enters the tank, venting for the tank is not required. If you are installing a new holding tank, no flammable waste trap is need as long as the tank is vented and has a water seal to prevent vapors from re-entering the buildings.



Drawing from MN Holding Tank Guidance

8. If installing an oil water separator in conjunction with the holding tank, see the [Oil Water Separator](#) guidance.
9. Design the tank system to allow easy access to allow cleaning and repair in the event that a leak does occur. Place the tank near a driveway if possible so it is easy to bring in a truck to pump it out.
10. Anchor the tank or pump only a portion of the liquid from the tank to prevent flotation if a holding tank is used in wet areas with a high water table. If this isn't done, the empty tank could float and lift out of the ground or at least shift breaking the piping.
11. Document the installation of underground holding tanks for future potential use including when it was installed, what it was made of, etc. Take pictures to show there is not an outlet or discharge before backfilling.

OPERATION RECOMMENDATIONS AND REQUIREMENTS

- Follow tank manufacturer's operation and maintenance recommendations.
- Regularly inspect the tank system (perhaps even hydraulically tests) to verify its continued structural integrity. Keep a record of the inspections.
- Regularly confirm the alarm system is working or manually check the level of waste in the tank. Keep a record of tests.
- Label the holding tank or place a sign near the access cover with the words "Nonhazardous Industrial Waste" or what is in the tank like "Floor wash water." While the sign serves as a reminder for employees, it also alerts emergency first responders who are unfamiliar with your site.
- If the tank is considered a [confined space](#), make sure to meet the Department of Labor and Economic Growth MIOSHA entry requirements. Call their Consultation, Education and Training Division at 517-322-1809 for more information.
- Implement good workplace practices, such as storing all petroleum products, solvents and hazardous materials in areas where there are no floor drains, to reduce contamination potential of the waste in the holding tank.
- Have the contents removed by a permitted and registered liquid industrial waste transporter on a regular basis so it does not overflow. There are no state time limit requirements on storing liquid industrial waste at your facility, but local ordinances may have limits.

Before the tank needs to be pumped, make sure your location has a site identification number. Meet the [manifesting requirements](#). See the [Liquid Industrial Waste Generator](#) guidance for information about obtaining site identification numbers, manifesting, and the other liquid industrial waste generator requirements, or see information in Chapter 2 of the [Michigan Manufacturers' Guide to Environmental Safety and Health Regulations](#).

- Remove precipitation from the secondary containment area in a timely manner. See the [Part 5 Rules Information Packet](#) for information about discharging from the containment area.
- Train employees about spill prevention and clean-up to minimize the possibility contaminants entering the holding tank, and, in the event of a leak or spill, appropriate response measures to collect, contain and clean-up the industrial waste.
- If a spill occurred into or from the holding tank, meet any release reporting requirements. See information at www.michigan.gov/deqrelease or refer to your facility's spill response plan if one was prepared.

Call the [DEQ District Office](#) or to the Environmental Assistance Center at 800-662-9278 with questions about the regulatory requirements. Discuss construction questions with your engineer or building contractor.

This document was developed in September 2007 by the Environmental Science and Services and Waste and Hazardous Materials Divisions. Reliance on information from this document is not usable as a defense in any enforcement action or litigation. Refer to the regulations or discuss your requirements with the regulating agency staff.

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